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TITLE: Process and composition for producing and maintaining good color in fresh meat, fresh poultry and fresh fish

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## INVENTOR-INFORMATION:

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INT-CL (IPC): A23B 4/00

EUR-CL (EPC): A23B004/00; A23B004/08, A23B004/16

## ABSTRACT:

Good color in fresh meat, fresh poultry, and fresh fish is established and maintained by subjecting such meat, poultry and fish to an atmosphere containing a low oxygen concentration to convert oxymyoglobin on the surface of the meat and poultry to reduced myoglobin, and both oxymyoglobin and oxyhemoglobin in fish to reduced myoglobin/hemoglobin, respectively, then subjecting the fresh meat, fresh poultry and fresh fish to a modified atmosphere containing a small amount of carbon monoxide to convert the reduced myoglobin to carboxymyoglobin to a depth of not more than about 0.375 inch below the surface of the meat and poultry, and to convert the reduced myoglobin/hemoglobin to reduced carboxymyoglobin/carboxyhemoglobin in the fish. The modified atmosphere is a new composition of matter. During or after the conversion, the fresh meat, fresh poultry and fresh fish may be maintained at temperatures above freezing in an atmosphere that contains more than about 10% carbon dioxide by volume to inhibit bacterial growth, or, alternatively, the fresh meat, fresh poultry and fresh fish may be frozen and maintained frozen in normal air atmosphere.

**United States Patent** [19]  
**Woodruff et al.**

[11] **Patent Number:** 4,522,835  
[45] **Date of Patent:** Jun. 11, 1985

[54] **PROCESS AND COMPOSITION FOR  
PRODUCING AND MAINTAINING GOOD  
COLOR IN FRESH MEAT, FRESH POULTRY  
AND FRESH FISH**

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[21] **Appl. No.:** 605,784

[22] **Filed:** May 1, 1984

**Related U.S. Application Data**

[63] Continuation of Ser. No. 24,730, Mar. 28, 1979, abandoned, which is a continuation of Ser. No. 817,184, Jul. 20, 1977, abandoned, which is a continuation-in-part of Ser. No. 722,870, Sep. 13, 1976, abandoned.

[51] **Int. Cl.<sup>3</sup>** ..... A23L 1/272

[52] **U.S. Cl.** ..... 426/264; 426/315;  
426/332; 426/418

[58] **Field of Search** ..... 426/264, 315, 332, 418,  
426/129, 312

[56] **References Cited**

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[57]

**ABSTRACT**

Good color in fresh meat, fresh poultry, and fresh fish is established and maintained by subjecting such meat, poultry and fish to an atmosphere containing a low oxygen concentration to convert oxymyoglobin on the surface of the meat and poultry to reduced myoglobin, and both oxymyoglobin and oxyhemoglobin in fish to reduced myoglobin/hemoglobin, respectively, then subjecting the fresh meat, fresh poultry and fresh fish to a modified atmosphere containing a small amount of carbon monoxide to convert the reduced myoglobin to carboxymyoglobin to a depth of not more than about 0.375 inch below the surface of the meat and poultry, and to convert the reduced myoglobin/hemoglobin to reduced carboxymyoglobin/carboxyhemoglobin in the fish. The modified atmosphere is a new composition of matter.

During or after the conversion, the fresh meat, fresh poultry and fresh fish may be maintained at temperatures above freezing in an atmosphere that contains more than about 10% carbon dioxide by volume to inhibit bacterial growth, or, alternatively, the fresh meat, fresh poultry and fresh fish may be frozen and maintained frozen in normal air atmosphere.

**26 Claims, No Drawings**